

## REMARKS

Claims 1-9, 11-18, 20-41, 50, 51, 53-56 and 65-70 are pending in the application.

Claims 20, 21, 24, 27-41, 53, 54, 56, 66-68 and 70 are withdrawn from consideration.

Claims 1, 50 and 65 have been amended to recite "a polymerizable surfactant". Support for this amendment may be found, for example, in original claims 18, 19, 51, 52 and 66, which are presently amended or cancelled in accordance with changes made to the independent claims. The dependencies of claims 20, 22, 23, 25, 27, 30, 33-35, 39, 53, 55 and 70 have been amended. Claims 19, 42, 43, 45, 52, 57, 58, 60, 71, 72 and 74 have been cancelled without prejudice. Applicants submit no new matter has been provided by way of these amendments.

### Claim Rejections under 35 U.S.C. § 103

The following is a quotation from the MPEP setting forth the three basic criteria that must be met to establish a *prima facie* case of obviousness:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2142, citing *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 1-9, 11-18, 50 and 51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0530729 A1 to Narimatsu *et al.* (hereinafter, "Narimatsu") in view of U.S. Patent No. 6,306,497 B1 granted to Wang (hereinafter, "Wang").

Narimatsu provides a pressure sensitive adhesive mixture that attaches to a front side of a semiconductor wafer, on which an integrated circuit has been formed, to secure the wafer while a back side of the wafer is physically ground to a desired thickness. The pressure sensitive adhesive comprises 100 parts by weight of an aqueous acrylic resin, 0.05-10 parts by weight of a non-ionic surfactant, 0.01-10 parts by weight of a crosslinking agent selected from the group consisting of an epoxy type crosslinking

agent, an aziridine type crosslinking agent and a mixture thereof, and 0.1-100 parts by weight of a water-soluble organic compound having a boiling point of 100°C or higher.

Wang discloses a pressure-sensitive adhesive comprising microspheres chemically bonded to a crosslinked polymer network. The adhesive is prepared from a mixture comprising a multifunctional aziridine crosslinking agent, microspheres having carboxylic acid functional groups and a binder having carboxylic acid functional groups. The microspheres control the peel strength of the adhesive by reducing the contact area between the adhesive and the substrate (abstract; col. 3, line 67 through col. 4, line 3).

Amended claims 1, 50 and 65 require a polymerizable surfactant. Neither Narimatsu nor Wang discloses a polymerizable surfactant. For at least this reason, the combination of Narimatsu and Wang cannot substantiate a *prima facie* case of obviousness. Further, there is no motivation to modify Narimatsu's adhesive composition to contain a polymerizable surfactant, nor is there an expectation that such a modification would successfully produce an adhesive having a satisfactory peel strength. Narimatsu states, "...the bleeding-out of the surfactant onto the surface of the pressure-sensitive adhesive layer results in formation of a barrier layer between the adhesive layer and the semiconductor wafer to be attached; thus, the synergistic effect by the crosslinking agent and the surfactant gives a low initial adhesion strength and substantially no increase in adhesion strength with time." (p. 6, lines 32-35). Narimatsu thus teaches away from polymerizable surfactants, which cannot bleed-out of the adhesive to produce the described "synergistic effect".

Narimatsu and Wang, alone or in combination, fail to teach or suggest all of the elements of Applicants' amended independent claims (or claims dependent thereon), and there is no motivation to modify the references nor an expectation of successfully rendering the instant claims.

Applicants respectfully request withdrawal of the 103 rejection and allowance of claims 1-9, 11-18, 50 and 51.

Claims 22, 23, 25, 26, 55 and 69 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Narimatsu in view of Wang and U.S. Patent No. 5,969,032 granted to Phan *et al.* (hereinafter, "Phan").

Phan discloses latex binders for use in paints. The latex binders are prepared by reacting an ethylenically unsaturated monomer and an ionic monomer with a water-soluble or water-dispersible polymerizable surfactant having a terminal allyl amine moiety.

The Examiner alleges that although Narimatsu discloses the use of non-polymerizable surfactants, Phan discloses "the advantages of reactive surfactants...as opposed to conventional surfactants used [in] compositions disclosed in [Narimatsu] (column 1, lines 43-63)...In light of such benefits, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include [the] allyl amine salt of dodecylbenzene sulfonate as the preferred species of surfactant for polymerization of acrylic latexes of Narimatsu et al. and thereby obtain the present invention." (Office Action of February 14, 2007, p. 4). We note, however, that Narimatsu and Phan contain opposing teachings. Whereas Narimatsu describes a "synergistic effect" that results from a non-polymerizable surfactant bleeding-out of the adhesive composition (*vide supra*), Phan describes the undesirable drawbacks of conventional surfactants by stating, "...the unbound surfactant has a tendency to migrate to the surface of the coating in order to lower the surface tension." (col. 1, lines 36-38). Phan thus teaches away from the surfactants disclosed in Narimatsu, and there is no motivation to combine Narimatsu and Phan. Wang cannot rectify this dichotomy. Further, there is no expectation of successfully creating a pressure-sensitive adhesive having a desirable peel strength when a non-polymerizable surfactant is employed in Narimatsu's adhesive, as discussed above.

A *prima facie* case of obviousness has not been established, and Applicants respectfully request withdrawal of the 103 rejection and allowance of claims 22, 23, 25, 26, 55 and 69, which depend directly or indirectly from independent claims 1, 50 and 65.

Claims 1-5, 6-9, 11-16, 50 and 65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 59179676 in view of Wang.

JP 59179676 discloses a pressure-sensitive adhesive tape comprising 80-99% acrylate or methacrylate monomer, 1-20% of a copolymerizable unsaturated monomer having acidic groups, 0-20% solvent and a compound having two or more aziridinyl groups in the molecule as a crosslinking agent. JP 59179676 does not disclose a polymerizable surfactant. Instead, JP 59179676 states, '...in the emulsion polymerization, a part of the emulsifier [(i.e., surfactant)] used during polymerization adheres to the polymer particle surface, but almost all of this emulsifier [(i.e., surfactant)] is removed during the above-mentioned medium removal operation, and moreover, by washing if needed.' (p. 8, second to last paragraph). This statement teaches away from the use of polymerizable surfactants, which cannot be removed from the adhesive following polymerization. JP 59179676 further states, '...in the emulsion polymerization method, a three-dimensional copolymer obtained to a high degree can be produced sometimes, but such a three-dimensional polymer becomes a hindrance for making a hydrosol in the succeeding steps; hence, it is desirable to prevent formation of such a polymer as much as possible during emulsion polymerization.' (p. 8, last paragraph). Again, this statement teaches away from the use of polymerizable surfactants which would promote the formation of a three-dimensional polymer. Wang also fails to disclose a polymerizable surfactant, and cannot rectify the failings of JP 59179676.

JP 59179676 and Wang, alone or in combination, do not teach or suggest the polymers of Applicants' amended independent claims. A *prima facie* case of obviousness has not been established, and Applicants respectfully request withdrawal of the 103 rejection and allowance of claims 1-5, 6-9, 11-16, 50 and 65.

In view of the above Remarks, Applicants have addressed all issues raised in the Office Action dated February 14, 2007. Should any issues remain, the Examiner is encouraged to telephone the undersigned.

Authorization to charge fees associated with a three-month extension of time is submitted herewith. If any additional fee is deemed necessary in connection with this Response, please charge Deposit Account No. 12-0600.

Respectfully submitted,  
LATHROP & GAGE L.C.

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